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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,427	01/02/2002	Guenther Heinz	B01-085A	7207
26683 7590 10/03/2007 THE GATES CORPORATION IP LAW DEPT. 10-A3 1551 WEWATTA STREET DENVER, CO 80202			EXAMINER KRUER, STEFAN	
			ART UNIT 3654	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/037,427	Applicant(s) HEINZ ET AL.	
	Examiner Stefan Kruer	Art Unit 3654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 26, 28 - 31, 33 - 38 and 43 - 45 is/are pending in the application.

4a) Of the above claim(s) 27 is/are withdrawn from consideration.

- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 26, 28 - 31, 33 - 38 and 43 - 45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

R
9/28/07.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 4, 6, 13, 16, 28, 31 and 43 - 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Winninger et al (US 6,033,331).

Winninger et al disclose:

- an elastomeric body (21, Fig. 1) having a width w and a thickness t and having a pulley-engaging surface;
- the elastomeric body having an aspect ratio w/t that is greater than 1;
- a tensile cord (20) contained within the elastomeric body and extending longitudinally;
- the pulley-engaging surface having a ribbed profile extending longitudinally along the elastomeric body (Fig. 6); and
- a ribbed profile having a rib (23) with an angle of approximately 90°;
- a plurality of ribs (23);
- a plurality of tensile cords (20);
- at least one pulley (61) having a ribbed profile (62) engaged with the pulley engaging surface;
- wherein the rib angle is in the range of approximately 60° to 120°.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 5, 14, 17 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al in view of Adifon et al (WO 99/43598).

Re: Claim 2, Winninger et al disclose their tensile cord (20) comprising non-conductive material (Col. 3, L. 49).

Attention is directed to Adifon et al who teach their tensile cord (726) comprising a conductive material, as inherent to fibers of "...high-carbon steel..." (Pg 7, Line 15).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al with the teaching of Adifon et al for the benefit of strength and resilience to high temperature, the latter for safety.

Re: Claims 5 and 17, Winninger et al disclose their belt as having no end.

Attention is directed to Adifon et al who teach their belt (16) as having an end for the suspension and traction of their elevator car (12) and counterweight.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al with the teaching of Adifon et al for the benefit of utility in suspending and moving elevator components.

Re: Claims 14 and 29, Winninger et al are silent with respect to their tensile cord having a conductive material having a resistance.

Adifon et al teach their tensile cord (726) comprising a conductive material having a resistance, as inherent to fibers of "...high-carbon steel..." (Pg 7, Line 15).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al with the teaching of Adifon et al to provide tensile cords of

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conductive material having a resistance, wherein such cords are of metallic material whereby a resistance to high temperature (e.g. fire) maintains strength for safety.

Claims 3, 15, 18, 21 – 22 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al in view of Adifon et al, as applied to Claims 2, 14 and 29, and in further view of Suhling (DE 3,934,654) and Siefert (US 3,662,596).

Re: Claims 3, 15 and 30, Winninger et al are silent with respect to tension cords of conductive material and Adifon et al teach a tensile cord comprising a conductive material having a resistance, wherein the resistance of the cord inherently varies through changes in loading, their tensile cord as such is not configured for indicating change in resistance.

Attention is directed to Suhling who teaches the incorporation of conductive tensile cords (12a – 12h, Fig. 2) in conventional flat- and toothed suspension belts (11) for the detection of breakage, whereby the integrity of the suspension belt is monitored for replacement; however, Suhling does not indicate a lifting load.

Further consideration is directed towards Siefert who teaches his apparatus for the measurement of "...tension or compression stresses in a metal tire cord embedded in rubberized material of a tire..." as a means to determine the tensile/compressive strains of "...reinforcing metal cords..." under different inflation, loading and operating conditions (Col. 1, Line 13).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al and Adifon et al with the teachings of Suhling and Siefert to provide a means to determine the lifting load of suspension belts by monitoring the tension cords for elongation in advance of failure, for purposes of maintenance, safety and optimization.

Re: Claim 18, Adifon et al disclose a plurality of tensile cords (726).

Re: Claims 21 and 22, Adifon et al disclose their cords "...formed from ... a metallic material, such as thin, high-carbon steel..."

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al and Adifon et al in view of Suhling and Siefert, as applied to Claim 15, and in further view of White, Jr. et al.

Neither Winninger et al, Adifon et al, Suhling nor Siefert discloses a jacket on a surface opposite the pulley-engaging surface.

Attention is directed to White, Jr. et al who teach their jacket (30) on a surface opposite their pulley-engaging surface as known to the art (Col. 4, Line 20).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al, Adifon et al, Suhling and Seifert with the teaching of White, Jr. et al to provide a jacket on a surface opposite the pulley-engaging surface as known to the art.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al and Adifon et al, Suhling, Siefert, and White, Jr. et al as applied to Claim 19, and in further view of Stork (US 3,948,113).

Winninger et al, Adifon et al, Suhling and Siefert are silent regarding a jacket and though White et al discloses his jacket as well known in the art, he is silent with regard to its material of construction.

Attention is directed to Stork who teaches his jacket (17,18, Fig. 2 and Col. 3, line 57) comprising "...rubberized woven fabric material such as ... nylon..."

In that nylon is known to the art as an abrasion resistant material, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reference of Winninger et al, Adifon et al, Suhling, Seifert and White, Jr. et al with the teaching of Stork to form the jacket of nylon for resistance to wear.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al and Adifon et al, as applied to Claim 2, and in further view of White, Jr. et al.

Neither Winninger et al nor Adifon et al disclose a jacket on a surface opposite their pulley-engaging surface.

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Attention is directed to White, Jr. et al who teach their jacket (30) on a surface opposite their pulley-engaging surface as known to the art (Col. 4, Line 20).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al and Adifon et al with the teaching of White, Jr. et al to provide a jacket on a surface opposite the pulley-engaging surface as known to the art.

Claims 8 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al, Adifon et al and White, Jr. et al, as applied to Claim 7, and in further view of Stork.

Re: Claim 8, Winninger et al and Adifon et al are silent regarding a jacket and, though White, Jr. et al disclose their jacket as well known in the art, they are silent with regard to its material of construction.

Stork, however, teaches his jacket (17,18, Fig. 2 and Col. 3, line 57) comprising "...rubberized woven fabric material such as ... nylon..."

In that nylon is known to the art as an abrasion resistant material, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reference of Winninger et al, Adifon et al and White, Jr. et al with the teaching of Stork to form the jacket of nylon for resistance to wear.

Re: Claims 9 and 10, Winninger et al disclose their tensile cord (20) comprising non-metallic material (Col. 3, L. 49).

Attention is directed to Adifon et al who teach their cords "...formed from ... a metallic material, such as thin, high-carbon steel..." (Pg 7, Line 15) for strength and flexibility.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al with the teaching of Adifon et al for the benefits of strength, flexibility and resilience to high temperature, the latter additionally for safety.

Claims 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al in view of Siefert.

Winninger et al do not address the measurement of tensile cord loading.

Attention is directed to Siefert who teaches an electrical circuit (21, 22, 25, Fig. 1) connected to the tensile cord for measuring the stress-strain of metal cords, for various loading conditions. Conversely, based on the measured strains, the tensile loads can be calculated.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al with the teachings of Siefert to provide a means to determine the tensile cord load of suspension belts by measuring the stresses of said cords through electrical transducers (P/I), to provide instantaneous feedback for operational oversight and historical data.

Claims 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al in view of Suhling.

Winninger et al do not address the measurement of tensile cord failure.

Attention is directed to Suhling who teaches his tensile cords for the detection of breakage, including his electrical circuit (Fig. 1) for detection of such failure.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al with the teaching of Suhling to provide a means to monitor the failure of tension members for safety and maintenance.

Claims 25, 33 – 34 and 36 – 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al in view of Stork.

Re: Claims 25 and 33 – 34, Winninger et al are silent regarding a fiber loading of their elastomeric body.

Attention is directed to Stork who teaches fiber loading in his elastomeric body to resist the formation of cracks (Col. 4, Line 8).

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al with the teaching of Stork to extend fibers from the pulley-engaging surface to improve resistance to wear and failure.

Re: Claims 36 – 37, Stork teaches, "...rubberized woven fabric material such as cotton, polyester or nylon or combinations thereof..." (Col. 3, Line 58) that forms his "partial tension section" as a "flexible resilient material".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reference of Winninger et al with the teaching of Stork to provide a matrix of fibers for the enhancement of tensile and torsional strength properties.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al in view of Suhling and in further view of Siefert.

Winninger et al disclose their belt having ribbed profile of approximately 90° to engage a pulley having a ribbed profile to enhance harmonic filtering and thereby service life, however Winninger et al are silent regarding the detection of a tensile cord load.

Attention is directed to Suhling who teaches an electric circuit for detecting a tensile cord failure and an interface to provide an alarm signal (audible or visual) and/or to automatically shutdown a hoist motor (Col. 4, line 38). Siefert teaches further his apparatus for measuring of the stress of reinforcing cords and his electrical circuit for indicating the stress under various operating conditions.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al with the teachings of Suhling and Siefert to reduce drive capacity and noise, as well as to promote safety through monitoring and indication.

Claims 35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al, Suhling and Siefert, as applied to Claim 26, and in further view of Stork.

Re: Claim 35, Winninger et al, Suhling and Siefert are silent regarding a fiber loading in their elastomeric bodies.

Attention is directed to Stork who teaches such to resist the formation of cracks.

It would have been obvious to one of ordinary skill in the art to modify the reference of Winninger et al, Suhling and Siefert with the teaching of Stork to inhibit the formation/propagation of cracks for enhanced service life and safety.

Re: Claim 38, Stork teaches, "...rubberized woven fabric material such as cotton, polyester or nylon or combinations thereof..." (Col. 3, Line 58) that forms his "partial tension section" as a "flexible resilient material".

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the reference of Winninger et al, Suhling and Siefert with the teaching of Stork to provide a matrix of fibers for the enhancement of tensile and torsional strength properties for enhanced performance and service life.

Claims 1 – 2, 4 – 5, 13 – 14, 16, 17, 28 – 29, 31 and 43 - 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adifon et al (WO 99/43598) in view of McKay (US 2,221,984).

Re: Claims 1, 13, 28, 31 and 43 - 45, Adifon et al disclose an elastomeric body (Fig. 7) having a width w and a thickness t and having a pulley-engaging surface, the elastomeric body having an aspect ratio greater than one and a tensile cord (726) contained within the elastomeric body and extending longitudinally. However, Adifon et al disclose their pulley-engaging surface and corresponding pulley as having flat profiles.

McKay teaches that an elastomeric body (comprising 10, 11, Fig. 3) having a ribbed profile of approximately 90° as the pulley-engaging surface, in accompaniment with a pulley having a ribbed profile (12), to provide "...a higher coefficient of friction between the belting and the pulley..." for the advantages of greater load carrying without slippage, lower initial tension, and increased service life (Pg. 2, Lines 35 - 49).

It would have been obvious to one of ordinary skill in the art to modify the invention of Adifon et al with the teaching of McKay to provide a ribbed pulley-engaging surface, with a rib angle of approximately 90° , to gain the benefits of performance and operational efficiencies.

Response to Arguments

Applicant's arguments filed 20 July 2007 have been fully considered but are not persuasive.

In his prelude to his argument(s) with respect to the lack of anticipation of a rib angle of the instant invention, the applicant is referencing portions of previous arguments that were addressed in subsequent office actions; namely, the lack of

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motivation inherent to the references with which to combine the cited references, thereby involving improper hindsight reasoning, as well as the recognition by one having ordinary skill in the art as to the uniqueness of the terms "rib" and "tooth".

Therefore, no further response regarding applicant's arguments with respect to the above is necessary.

Applicant has, in response to examiner's most recent comments, amended the claim language to provide a direction to his rib. Upon review of the cited references, examiner had concluded that the previously cited reference of Winninger et al anticipates the claimed approximate angle as depicted in their figures of reference. The examiner acknowledges applicant's arguments with respect to the referenced ISO Standard 9981, for which the applicant has provided a copy dated 01 November 1998 in which an angle 40° is listed; however, the referenced characters of standard dimensions designated as H, J, K, L and M by Winninger et al are not disclosed in the copy provided by the applicant. Furthermore, Winninger et al do not disclose a date of issue or numbered edition of the ISO standard. Consequently, a definitive angle with respect to the disclosure of Winninger et al, other than that as depicted, is not realized.

It is noteworthy that the rib angle as depicted by Winninger et al is indeed that as claimed by the instant invention – certainly well in excess as that provided in the ISO standard as provided by the applicant.

Furthermore, as cited in the office action of 19 April 2006 and acknowledged by the applicant, the cited reference of White, Jr. et al (patent date of 1 Jan. 1991) teaches a preference of a rib having a 60° angle versus the (then) conventional 40° angle for the features as claimed by the instant invention – reduction in belt noise and reduced tension decay (thereby enhanced/stabilized power transfer and service life) – to which the applicant responded that it would require a "leap" to use the reference of White, Jr. et al to increase the rib angle an additional 50% and thereby anticipate the approximate angle as claimed by the instant invention. Nevertheless, White, Jr. et al does positively teach an enhancement over then conventional belt angles for the features of the instant

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invention, which in combination with the Winninger et al reference and those cited/referenced in previous office actions, describes an appreciation by those having ordinary skill in the art to increase, certainly not decrease, the rib angle for the very same features as those of the instant invention.

Finally, with respect to the rejection of the independent claims by the references of Adifon et al in view of McKay, McKay depicts the approximate angle as claimed in the instant invention for the cited features reflecting several of those of the instant invention.

Neither the original claim language nor the amended claim language overcame the rejections based on the prior art of record of the previous office action.

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kitahama et al (US 4,904,232), Ach (2004/0262087) and Black (GB 2,134,209 A) and Takami et al (US 4,773,895) are cited for references elastomeric bodies having ribbed profiles with rib angles of approximate 90°.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Kruer whose telephone number is 571.272.5913. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Cuomo can be reached on 571.272.6856. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866.217.9197 (toll-free).

SHK, 19 September 2007


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